



## State Plant Pathologist Finds the Fun in Fungi

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MADISON – On a good day, Anette Phibbs spends her time looking at dead plants under a microscope. On a great day, she figures out what killed them.

Phibbs is the director of the plant industry laboratory for the Wisconsin Department of Agriculture, Trade and Consumer Protection, and serves as the state plant pathologist and nematologist. She works with one other plant pest and disease specialist, Sue Lueloff, and occasional seasonal help in a lab on University Avenue in Madison.

The laboratory analyzes samples from both agricultural crops and nursery stock that are sent in by the department's plant health inspectors. Sometimes the goal is to diagnose diseases that are causing problems on ornamentals. Other times, the lab certifies plants for export or screens for new and exotic diseases as part of a monitoring survey.

"It starts with getting a plant, usually in a bag, and I examine that plant. First I decide what kind of disease might be the problem, based on what plant it is and what symptoms I observe," she says. The spring survey of greenhouse annuals and perennials focuses on diseases caused by viruses. But the lineup might also include bacteria, fungi, and nematodes – microscopic worm-like organisms that often infect corn, soybean or potato crops.

Besides that peek through the microscope, Phibbs employs diagnostic lab tests and techniques similar to those used for human diseases – culturing bacteria and DNA matching, for example.

"We collaborate with researchers all over the country," she says. "When I find something that's new to the state, we send it to a USDA expert for confirmation. We're trying to intercept new and exotic or invasive pests."

It's not just idle curiosity. These pests and diseases may cost farmers and nursery growers millions of dollars in damage and lost yields. Finding them may lead to destruction of infected crops or quarantine of fields, working through channels to stop plants at the source or limit the spread of these diseases. Her work finds its way into the Wisconsin Pest Bulletin, and she and Lueloff are responsible for another resource for growers -- an [online gallery of photos](#) showing plant virus symptoms, all shot in their makeshift photo studio at the laboratory.

"First reports" are a badge of honor in the plant pathology world, and Phibbs has been involved in a number of them. In 2003, there was the first report of soybean dwarf virus in Wisconsin. Since 2010, she found several new root rot organism called Phytophthora in Christmas trees. That find started with an inspector bringing in dying Christmas trees. Another Phytophthora was identified in soybeans found during a USDA funded survey of soybean fields for new and exotic diseases.



*Anette Phibbs directs the Plant Industry Laboratory.*

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Her most recent first report resulted in co-authorship of an article in the May issues of *Plant Disease*, an academic journal published by the American Phytopathological Society. That was the first report of soybean vein necrosis disease caused by SVNaV, or soybean vein necrosis-associated virus. Her co-authors were colleagues at the University of Wisconsin-Madison and Iowa State University. The find led to more research at the UW-Madison.

The current plant laboratory on University Avenue will soon give way to new digs on Agriculture Drive, just down the hill from the department's headquarters in the State Agriculture Building. The old lab is a makeover from what used to be the state DNA crime lab. Phibbs helped design the new facility, "so it will follow our work flow a little better," she says.

It won't change what she loves most about her job, though: looking at organisms and getting to know the fungi, bacteria, nematodes. And it won't change what challenges her the most – paperwork and grant-writing.

Phibbs grew up in northern Germany, and earned her bachelor's and master's degrees in botany from the University of Wuerzburg. She joined DATCP in 1992, working the first 10 years as the state apiarist and ginseng specialist before moving over to the lab. She previously worked at UW-Madison and the Department of Natural Resources. She and her husband, Mark, live on Madison's East Side. When she's not looking through the microscope, she kayaks and gardens with native plants.

But right now, she has phlox plants lined up to be tested for a new nematode that she found just a couple of days ago. For the state plant pathologist, it doesn't get any better than that.

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